

CLAIMS

1. Process for obtaining a highly-purified alginate composition, with the stages:
- 5 - Extraction of algae material or raw alginate in a solution with a complex forming agent,
- Filtering of the solution,
- Precipitation of the alginate out of the solution, and
- Collection of the precipitated alginate.
- 10 2. Process according to Claim 1, in which ethylene diamine tetra acetic acid is used for the extraction as a complex forming agent.
- 15 3. Process according to Claim 1, in which the extraction takes place in a soda solution.
4. Process according to Claim 2 or 3, in which activated carbon is added for the extraction of the solution..
- 20 5. Process according to one of the foregoing Claims, in which, before the filtering of the solution, sedimentation of cell constituents and particles is carried out with a porous binding agent from the solution.
- 25 6. Process according to Claim 5, in which the sedimentation takes place with a porous granulate on the basis of diatomaceous earth, cellulose, or recycling materials from regenerated raw materials.
- 30 7. Process according to one of the foregoing Claims, in which the filtering takes place with deep filters of decreasing pore size in each case.
- 35 8. Process according to one of the foregoing Claims, in which the precipitation of the alginate takes place with ethanol.
9. Process according to Claim 6, in which the ethanol content

is selected in the range from 10 - 50 %.

10. Process according to one of the foregoing Claims, in which the collection of the precipitated alginate is effected by foaming out of the solution, by decanting the solution, or by stirring the solution with a stirring and collecting device.
11. Process according to one of the foregoing Claims, in which the dewatering of the alginate takes place at room temperature.
12. Process according to one of the foregoing Claims, in which, after the dewatering, the extraction, filtering, precipitation and dewatering are repeated at least once again.
13. Process according to one of the foregoing Claims, in which use is made as the algae material of fresh algae material occurring in nature or fresh algae material cultivated in a bioreactor or tank system, or algae material from fused or regenerated algae cells or commercial alginate.
14. Process according to one of the foregoing Claims, in which use is made as the algae material of specific organ or tissue parts of algae or algae parts, or specific organ or tissue parts of algae or algae parts from specific stages of the development cycle of algae.
15. Process according to one of the foregoing Claims, in which use is made as the algae material of brown algae or other alginate-producing fresh-water or salt-water algae.
16. Alginate composition, which as a mixed polymer consists of mannuronic acid and guluronic acid,
characterised in that, in the mixed polymer, a ratio pertains of mannuronic acid to guluronic acid in the range from 1 % to 90 %, and the mean molecular weight of the

mixed polymer is greater than 250 kD.

17. Alginate composition, which in an aqueous solution with a 0.1 % concentration, has a viscosity in the range from 10 to 15 mPa . s.
18. Alginate composition, which in an aqueous solution with a 0.5 % concentration, has a viscosity in the range from 250 to 300 mPa . s.
19. Alginate composition, which in an aqueous solution and under illumination with an excitation wavelength of 366 nm in the spectral range from 380 to 550 nm, does not show any fluorescence emission.
20. Alginate composition, which under colour tests with the Folin-Denis reagent or with dimethocycbenzaldehyde, does not show any colouration.
21. Alginate composition, which in an aqueous solution and under illumination with an excitation wavelength of 270 nm in the spectral range from 300 to 500 nm, does not show any fluorescence emission.
22. Alginate composition, which does not contain any proteins detectable with the photometric protein test according to Bradford.
23. Alginate composition, which when implanted in the kidneys of BB/OK rats, does not initiate any significant immunological reaction.
24. Alginate composition, which, according to the application of the XTT/MTT test, or the cell rotation method, or an electrical cell number and cell size analysis, does not lead to any detectable lymphocyte activation.
25. Alginate composition according to one of Claims 16 to 24,

- [illegible]